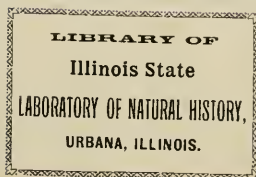


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NATURAL
RESOURCES..







FIELD COLUMBIAN MUSEUM

PUBLICATION 11.

Zoological Series.

Vol. 1, No. 3.

ON SUNDRY COLLECTIONS OF
MAMMALS

BY

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(Except Ornithology.)



CHICAGO, U. S. A.

May, 1896.

PUBLICATIONS OF THE MUSEUM.

For the convenience of scientific workers it has been deemed expedient to issue the publications of the Museum in separate series for each of the sciences represented. The following series have been established: Historical, Geological, Botanical, Zoölogical, Ornithological and Anthropological.

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Full lists of the publications of the Museum may be found in the Annual Report of the Director.

Publications are sent to societies and institutions of a public character that reciprocate with their own literature, and to a limited number of scientists who are able to exchange.

Two publications have been previously issued in the Zoological Series: HAY, "On the Structure and Development of the Vertebral Column of *Amia*," (Pub. 5), and HAY, "On certain portions of the Skeleton of *Protestega gigas*," (Pub. 7).

FREDERICK J. V. SKIFF,
Director.

ON SUNDRY COLLECTIONS OF MAMMALS RECEIVED BY THE
FIELD COLUMBIAN MUSEUM FROM DIFFERENT LOCALI-
TIES, WITH DESCRIPTIONS OF SUPPOSED NEW SPECIES
AND SUB-SPECIES.—D. G. ELLIOT, F. R. S. E.

I. A LIST OF MAMMALS OBTAINED BY THE MÉNAGE EXPEDITION TO BOR-
NEO AND THE PHILIPPINE ARCHIPELAGO.

In 1894 Messrs. F. S. Bourns and D. C. Worcester published an abbreviated list of the mammals procured by them in "Preliminary Notes" issued by the Minnesota Academy of Natural Sciences, but many species had not at that time been ascertained. The Field Columbian Museum having obtained a number of species, I give the names as determined by me, and the list will serve to supplement that of Messrs. Bourns and Worcester.

Sus ahænobarbus Huet.

Two specimens, a male and female, Palawan.

This species, the male of which was described by Huet in *Le Naturaliste*, 1888, p. 5, differs considerably from *Sus Philippensis* in general appearance, and in the shape of the skull and teeth. As these have been figured by Huet, l. c., the latter species under the name of *S. marchei*, it will not be necessary for me to go into the details of their differences. The female, however, not having been procured by Huet, a short description of its general appearance may not be amiss. Nose, flesh color; a broad band of black hairs crosses the nose from margin of upper lip, remainder of nose and sides of head tawny ochraceous. Space between eyes, top of head, and line down back of head, black. Hairs on back of neck very long, rufous with black bases. Whiskers quite long, yellowish-white, with black hairs intermingled. Skin of body tawny ochraceous (which gives the general color to the animal), and all of it covered sparsely with black hairs, longest and thickest in the middle of the back. The hairs between the shoulders are rufous for a third of their apical length. Tail covered along the center on top

with short black hairs, and the end tufted with the same. Legs covered with short black hairs. Ears not tufted. Hoofs narrow, black and pointed. The head is very long and narrow, with the nasal portion greatly elongated. This species is given in Messrs. Dean and Worcester's list.

Cervulus muntjac *Zimm.*

A male and female from Borneo, the face of the male being very dark, in fact, black, probably only an individual variation.

Cervus —————?

PLATES VI, VII.

A number of specimens of a small brown deer, adults of both sexes as well as immature individuals from the island of Culion. As there does not appear to be a description of this species in any European publication, I give one of the skin and skull.

General Characters. Hair rather coarse and stiff, longest and most coarse on the flanks. Body rather stout, legs slender, hind ones longest. Ears rather long, slightly rounded at tip. Head slender, nose rather long and pointed. Hoofs narrow and pointed. Ears hairy, the hairs on inside long and thick.

Adult Male. Nose and sides of face in front and around eyes pale yellowish-brown. Forehead mummy-brown, hairs tipped with yellowish-brown. Horn pedicles ochraceous. Back of neck, back and sides mummy-brown, the hairs being whitish at base, then a ring of ochraceous, and tip black, sometimes the tip is ochraceous. The general hue of the body then is mummy-brown with a shade over all of ochraceous. From between the shoulders to root of tail is a black dorsal stripe of about an inch in width. End of under lip yellowish-white, surrounded by a band of pale brown, and space between jaws beneath yellowish-white. Ears mars-brown, hairs tipped with ochraceous. Front of neck pale yellowish-brown like sides of face. Chest, shoulder, under parts, except belly and outside of thighs, purplish-brown, with many long white hairs intermingled with those of the other color. Belly and inside of thighs white. Forelegs blackish-brown, inclining to ferrugineous behind. Hind legs blackish-brown with a long narrow whitish stripe in front of the knees. Hoofs black. Horns in the velvet, whitish-brown. End of nose and center of upper lip naked, jet black. Tail rather bushy, mummy-brown above, white beneath.

Adult Females. General color throughout pale yellowish-brown, darkest in the center of the back and top of head. Fore legs prout's brown on the outside, inside russet. Hind legs russet; stripe in front of knee dark buff. Center of belly yellowish-white. Tail bushy,

russet above, white beneath. Hoofs black. Ears dark brown outside, hairs tipped with buff; inside white.

Skull of Male. The roof of the cranial cavity is arched, rising but slightly at the forward portion above the plane of the face, but declining sharply from the junction of the frontals and parietals to the supra-occipital. The general shape is rather narrow with a moderately long face, diminishing rapidly in width from the anterior edge of first premolar. The premaxillæ are very long, and from their upper posterior borders to extreme anterior edge are equal in length to the nasals. Distance from anterior end of nasals to end of premaxillæ $1\frac{3}{4}$ inches. Antorbital fossa occupies nearly all the lachrymal; is deep and measures in length about seven-eighths the diameter of the orbit. Antorbital vacuity rather large, reaching about three-fourths the length of the upper border of the antorbital fossa, and three-eighths of an inch wide in its broadest part. There is a slight sagittal crest commencing at the junction of the frontals and parietals and extending forward on the frontal plateau to the middle of the orbits. Nasals much rounded posteriorly, becoming flatter at their anterior extremity. Parietal much longer than broad in its widest part. Occipital condyles large. Paroccipital processes flat, broad above, tapering rapidly to a point, and curving inward. Auditory bullæ large and prominent. The mesopterygoid fossa is quite short in proportion to the length of the skull, and the auditory bullæ extend in width about half its length. Teeth of moderate size, with small supplementary columns on the molar series. Horn pedicles quite long, commencing at the upper border of the orbit and rising nine-tenths of an inch above the cranium, and extending upward and backward from the orbit. The horns are in the velvet, and probably have not attained their full growth. The burr is of moderate size and only slightly exceeding the beam in diameter. This last is flattened at base, extends upwards and curves outwards for $5\frac{1}{2}$ inches on the left side, and $6\frac{1}{4}$ inches on the right, and both turned inward at tip. A straight brow antler branches off about an inch above the burr and rises for about three inches, the right being slightly longer than the left. Extreme width between horns at apex nine inches. Width between burrs, $1\frac{3}{4}$ inches. The coronoid process of the mandible is greatly curved, and its point extends behind the condyle. The ramus is also greatly curved on its lower border from the angle to the anterior edge of first lower premolar. The mental foramina are large, oblique, and with the exterior border spread outward.

A skull of an old female resembles the above described one of the male, but is more slenderly built, with narrower frontals and

slightly larger nasals. The cranium is arched in a similar manner with the same sharp decline of the parietal to the supraoccipital, and has the small sagittal elevation anterior to the parietal suture. Also the depression is less in the posterior portion of the frontals. The antorbital fossa is not so wide nor deep as that of the male, but the antorbital vacuity is very extensive. The auditory bullæ are very large, resembling in this respect those of *C. porcinus*.

MEASUREMENTS OF SKULL OF MALE.

	INCHES.
Total length in straight line from tip of nose to lambdoidal suture,	8.45
Point of premaxilla to tip of nasals, - - - - -	1.70
Length of premaxilla, - - - - -	2.50
Length of nasals, - - - - -	2.70
Anterior rim of orbit to free end of premaxilla, - - -	4.30
Upper end of nasals to fronto-parietal suture, - - -	2.90
Across maxilla one inch in front of rim of orbit, - - -	2.50
Across maxilla two inches in front of rim of orbit, - - -	1.45
Extent of upper premolars, - - - - -	.90
Extent of upper molars, - - - - -	1.40
Extent of lower premolars, - - - - -	.92
Extent of lower molars, - - - - -	1.62
Circumference of burr, - - - - -	.50
Length of humerus from head, - - - - -	5.60
Length of ulna (extreme), - - - - -	6.40
Length of radius, - - - - -	4.90
Length of metacarpal canon bone, - - - - -	4.01
Length of femur from upper border of head to lower extremity of internal condyle, - - - - -	7.—
Length of tibia (extreme), - - - - -	7.75
Length of metatarsal canon bone, - - - - -	4.875

I have refrained from giving a name to this species and so possibly escaped adding a useless synonym, for the reason that Mr. Worcester writes me he thinks it probable that P. Heude has described it already. His paper, which may contain a description, is entitled "Probléma Philippinense sur Cervinorum, Cranium, etc., Memoires concernant l'Histoire Naturelle de l'Empire Chinois, Zi-Ka-Wei, 1887." I have never seen this paper, and am not aware if there is a copy in this country, but it seems to include all specimens of Philippine deer under various appellations. I can only give the above descriptions of the examples in the collection of this institution, trusting that some more fortunate fellow-worker may be able to fit them to one of P. Heude's names.

Nycticebus tardigradus (Linn.)

A skin of a female from Bongao. The skull exhibits but two incisors in upper jaw which is considered a character of *N. javanicus*.

The color of the fur on back and sides is tawny ochraceous, darkest in middle of the back, with an irregular blackish-brown stripe from forehead over the top of the head and middle of back to loins. White stripe on nose to forehead and one above eyes to cheeks. Sides and back of neck grayish.

***Hystrix crassispinis* Günth.**

One example from Borneo.

In their Memoir published by the Minnesota Academy of Natural Sciences, in December 1894, Messrs. Bourns and Worcester give *Hystrix pumila* Günth, from Palawan and Calamianes, but make no mention of the present species. Mr. Worcester in a letter to me states that while a number of specimens of a porcupine were obtained in the islands above named, and which are pronounced *H. pumila* by Mr. Everett, several examples of another species were procured in Borneo. It is undoubtedly one of these last I have received, as I have not seen any specimens of *H. pumila*.

***Scotophilus temminckii* (Horsf.).**

Four specimens from the island of Panay.

These examples are apparently *S. temminckii* as given by Dobson, although they do not exactly agree with his description. They are exactly alike and have the entire upper parts prout's brown, under parts pale buff. Forearm, $1\frac{7}{8}$ inches; thumb, $\frac{1}{4}$; first finger, 2 inches; second finger, $3\frac{1}{8}$; third finger, $2\frac{3}{4}$; fourth finger, $2\frac{1}{8}$; tail, $1\frac{1}{4}$; tibia, $\frac{3}{4}$. It will be seen that the measurements are smaller than those given by Dobson, but as he states specimens vary greatly, both in color and size, I have considered these from Panay as *S. temminckii*.

***Semnopithecus pruinus* Desm.**

An adult and young from Borneo.

***Hylobates concolor* S. Müller.**

Adult from Borneo.

2. THE FOLLOWING IS A LIST OF SPECIMENS PROCURED FROM PROF. J. B. STEERE, COLLECTED IN THE PHILIPPINE ISLANDS, AND REPRESENT SPECIES NOT DETERMINED BY HIM.

Cervus steerii *sp. nov.*

PLATES VIII-X.

Basilan, Philippine Archipelago (Steere).

General Characters. Hair coarse and harsh, spreading out from a circle on top of the shoulders as seen in the Water Buck (*Cobus ellipsiprymnus*) and some other African antelopes. General form of body stout and heavy, with stout, rather short legs, the hind ones longer than those in front. Ears small and rather narrow, and covered with hair within and without. Head long and narrow, especially at the nasal region, which is suddenly contracted in front of the upper tooth row. Nose pointed. Hoofs broad for their length and heavy, with a wide spread, and rounded at the tip, not pointed.

Adult Male. Nose and sides of face vandyke brown, the tips of the hairs ferrugineous. A small space above the nostrils blackish-brown without any ferrugineous. Bare end of nose and center of upper lip brownish-black. No mark of a mustache as in *C. philippinus*. Forehead, nostrils, sides of upper lip, back of head to anterior border of eyes, and inner sides of horn pedicles, black, each hair largely tipped with ferrugineous. Beneath the eyes, cheeks and outer side of horn pedicles bright ferrugineous. Ears black behind and white inside. Back of neck and line to center of shoulders vandyke brown. No dorsal streak. Sides of neck, back, sides of body, outsides of legs to ankles, and tail above and below, prout's brown. Chin and sides of under lip for half its apical length vandyke brown. Lower sides and between jaws whitish or yellowish-white. Chest between fore legs, entire belly and insides of thighs yellowish-white, with a strong tinge of buff on the belly. Inside of legs whitey-brown. Hoofs blackish-brown at base, remainder pale yellow. Horns roughened for their entire length, and except the tips of the tines, black. Tip of tines and edges of roughened portions of the beam, yellowish-white.

Skull of Male. Roof of cranial cavity convex from middle of orbits to supra-occipital, the slope being most marked from between the pedicles to base of skull. Facial portion flat and broad, retaining its width to second premolar, when it narrows rapidly, and is depressed markedly at the junction of the nasals and maxillæ anterior to the antorbital vacuity. Antorbital fossa large and deep, being nearly

equal in length to the diameter of the orbit, and occupying nearly all the lachrymal. Nasals broad at their junction, with the frontals narrowing rapidly for one-third their length, then continuing with equal width beyond the junction with the premaxillæ, when they narrow to a point. Antorbital vacuity moderate, longer than wide, being a moderate slit at the junction of the frontal, nasal, lachrymal and maxilla. Pedicles of moderate height and rather stout, rising behind the orbit just in front of the parietal suture, and inclined backwards, and directed above the plane of the face and the convexity of the frontals. Auditory bullæ very small; condyles large. Paroccipital process broad at top, compressed laterally, curving inwards and graduating to a point. Premaxilla rather broad, considerably exceeding in length the upper molar series. Teeth large, the molars possessing prominent supplementary columns. Canines small, slightly curved and pointed, on upper jaw only. Length of parietal suture about equal to its greatest width. Coronoid process of mandible long, of about an even width and curving backwards, its upper extremity extending beyond the posterior edge of condyle. This last transverse projection is broadest and flattest on its anterior border, tapering to a sharp edge on the exterior. The inferior dental foramina are pyriform in shape, the pointed end upwards, while the mental foramina are oblong slits lengthwise with the mandible. When the jaws are closed the first lower premolar lies beyond and in front of the first upper premolar.

Skull of Female. The cranial cavity, like that of the male, is decidedly convex above, the slope however being most abrupt anteriorly to between the orbits; differing in this respect from the skull of the male, which has the slope most pronounced to the supraoccipital. Facial portion rather flat and narrow, and the contraction of the maxillæ at first premolar is not so conspicuously apparent as in the male. The antorbital fossa is large and deep and of comparatively equal dimension: and the antorbital vacuity is very long and wide. The nasals are broad posteriorly, narrowing rather sharply about midway their length and continue with equal width beyond the posterior border of the premaxillæ. Auditory bullæ quite small. Teeth much worn, are large, with supplementary columns not so prominent as in the male; the canines short and blunt at point. The outline of mandible, with the size and shape of the inferior dental, and mental foramina are the same as those seen in the male. The general appearance of the skull is long and narrow when compared with that of the male, but its main characteristics do not differ, and while not so pronounced, the contraction of the maxillæ in front of first premolar is equally great when compared with the general width of the superior surface.

MEASUREMENTS.

		FEET.	INCHES.
<i>Animal.</i>	Height at shoulder, - - - - -	1	10½
	Height at rump, - - - - -	2	8¼
	Length from nose to root of tail, - - - - -	3	8
	Length of ear outside, - - - - -	0	3½
	Length of opening, - - - - -	0	2½
	Antler from burr to extreme tip, - - - - -	0	9
	Brow antler outside, - - - - -	0	2½
	Brow antler inside, - - - - -	0	1⅝
	Inner tine inside, - - - - -	0	2
	Circumference of burr, - - - - -	0	3⅞
	Circumference of beam at base, - - - - -	0	3⅝
	Length of humerus, - - - - -	0	6.15
	Length of ulna, - - - - -	0	7.25
	Length of radius, - - - - -	0	5.50
	Length of metacarpal canon bone, - - - - -	0	4.50
	Length of femur, - - - - -	0	7.25
	Length of tibia, - - - - -	0	7.75
	Length of metatarsal canon bone, - - - - -	0	5.50
<i>Skull.</i>	Total length, - - - - -	0	8.75
	Tip of premaxilla to tip of nasals, - - - - -	0	1.20
	Length of nasals, - - - - -	0	2.80
	Anterior rim of orbit to tip of premaxilla, - - - - -	0	4.50
	Upper end of nasals to fronto-parietal suture, - - - - -	0	3.25
	Width of skull one inch in front of orbits, - - - - -	0	2.80
	Width of skull two inches in front of orbits, - - - - -	0	1.16
	Extent of upper premolars, - - - - -	0	1.25
	Extent of upper molars, - - - - -	0	1.70
	Extent of lower premolars, - - - - -	0	1.37
<i>Skull of Female.</i>	Extent of lower molars, - - - - -	0	1.80
	Length of premaxilla, - - - - -	0	2.10
	Total length, - - - - -	0	9.
	Tip of premaxilla to tip of nasals, - - - - -	0	1.30
	Length of nasals, - - - - -	0	3.
	Anterior rim of orbit to top of premaxilla, - - - - -	0	4.75
	Upper end of nasals to fronto-parietal suture, - - - - -	0	3.
	Width of skull one inch in front of orbit, - - - - -	0	2.75
	Width of skull two inches in front of orbit, - - - - -	0	1.90
	Extent of upper premolars, - - - - -	0	1.10
	Extent of upper molars, - - - - -	0	1.40
	Extent of lower premolars, - - - - -	0	1.10
	Extent of lower molars, - - - - -	0	1.65
	Length of premaxilla, - - - - -	0	1.80

This apparently new species of Rusine deer was procured by Professor Steere in the island of Basilan of the Philippine Archipelago. It has certain characters in horns, skull and color of pelage which seem to separate it from all the species heretofore described, and which would belong to that division of the Cervidæ designated

by Sir Victor Brooke as having "the outer tine always surpassing the inner tine in length." The specimen serving as the type, and which is the only one I have seen, is a fully adult male, and the horns for their size are heavy and rough. In shape they are very different from those of *C. philippinus* (P. Z. S., 1866, p. 367, called *C. marianus*, and 1877, pl. VIII), the brow antler of *C. steerii* being quite short, straight, diverging rapidly to a point, and joining the beam at a sharp angle. The inner tine is of the same shape and of about the same size as the brow antler, and bends backwards and very slightly inwards. The burr is rather small, and but slightly larger than the beam in circumference. The latter is thick and straight, with little or no taper, the outer tine, which curves slightly inward, being simply the natural prolongation of the beam to a point. It is widest at the fork of the inner and outer tines.

From *C. nigricans*, Brooke, the present animal differs in the color of the coat, which is much brighter than that of Sir Victor Brooke's species, (P. Z. S., 1877, p. 57,) and also from the form of the skull of *C. nigricans*, a figure of which taken from a female is given in P. Z. S., 1877, pl. X. Some allowance must be made for the difference in sex, but the general form of the two skulls is quite different, the facial portion of *C. steerii* being quite flat and depressed in the middle of the frontals between the orbits, while the maxilla are sharply reduced in width from the anterior border of the second pre-molar to the premaxillary suture, forming a narrow, rather sharp nose. The nasals at their upper posterior border are quite broad, but narrow very sharply at about one-third their length from the junction with the frontals. The shape of the antorbital vacuity is very different, being quite sharply pointed at its lower end and the antorbital fossa is larger and deeper. There is quite a difference in the dimensions between the skulls of the two animals, more than the fact of sex would seem to warrant, even in the same species. There is no longitudinal suture dividing the malar, but this unusual peculiarity in the skull of the type of *C. nigricans* is probably, as suggested by its describer, an individual and not a specific character.

I am unable to find any description of a deer answering to the specimen collected by Professor Steere, and the locality is one from which zoological examples have not often been obtained. As I have already stated in a former portion of this paper, I have not seen P. Heude's descriptions of Philippine deer, but as a copy is not obtainable of his memoir, I can only trust that the present species has escaped the shower of names he appears to have bestowed upon the Cervidæ of the Philippine Archipelago. Professor Steere writes me as follows about this species: "The Basilan Cervus was found

occupying the higher parts of the island, in a country of steep, rocky ridges, covered thickly with timber and thick undergrowth. In the valleys were shallow streams. I took it rather for a mountaineer than a swamp inhabiter, though the whole country was dripping with moisture at the time of my visit, and the higher lands in the Philippines are always the swamiest. We have one male mounted in the museum of the University of Michigan. I noticed that all the deer procured in Basilan were closely alike in color, size and character of horns. I believe the skin and skull you have, with a skin of a doe and the buck mounted here, were all the specimens we procured from Basilan. I have an impression that the same differentiation of species of *Cervus* exists in the Philippines as I found so prominent in many genera of birds."

From *C. philippinus* the present species differs in the shape of the horns, especially of the brow antlers, which are much shorter relatively to the length of the beam and straight. The horns figured of *C. philippinus* in P. Z. S., 1866, p. 367, and 1877, p. 56, as *C. mariannus*, but which are considered by Sir Victor Brooke to belong to *C. philippinus*, the two species being identical, are entirely different in shape and relative proportion of tines, from the horns of *C. steerii*. The color of the two animals is different, and the new species is without the mustache and other characteristic marks on the face. The tarsal gland is not marked by any particularly colored spot whatever.

Tragul^us nigricans *Thomas*.

PLATE XI.

A skeleton of an adult animal from Balabac, which I presume belongs to this species. Figures are given of the upper surface and profile of the skull. This is probably the species given by Messrs. Dean and Worcester as *T. javanicus*.

Pteropus jubatus *Eschol*.

Two specimens, male and female, from Concepcion, Panay.

Pteropus edulis *Geoff*.

Two specimens, male and female, from Island of Leyte.

Pteropus hypomelanus *Temm*.

Four examples, male and female, from Concepcion, Panay, and a male and supposed female from Guimares. This last specimen is very differently colored from the female obtained at Concepcion. The entire neck and upper part of the back being a yellowish buff grading into a rusty red, and continuing as a collar of yellowish buff on shoulders and on top of breast, where, however, it is very narrow. Middle

of breast and abdomen pale yellow, grading into red on the sides and then into black along the edge of wing membrane.

***Pteropus auri-nuchalis* sp. nov.**

PLATE XII.

Two males from Leyte Island (Steele).

Ears about as long as the muzzle, obtusely pointed. Interfemoral membrane narrow in the center, covered thinly with fur. Wings from sides of back.

Adult Male. Sides of face, forehead, line over the eyes, and throat black. Fur very thin on throat. Crown of head dusky, hairs tipped with yellow. Nape golden yellow, with a narrow line of orange on back of neck. Sides of neck and upper part of back at base of neck maroon grading into brownish-black, and succeeded on rest of back by reddish-brown. Fur on lower side of body black with a maroon tinge on front of neck. Many yellow hairs interspersed among the black on body below the chest. The fur on all the body, except the back below the shoulders is woolly and rather long, but below the shoulders it is short and smooth. There is but little hair upon the wing membranes above, but on the lower side, the humerus is completely covered with blackish-brown fur, and this extends over the membrane to two-thirds the length of the forearm. Thighs covered with blackish-brown fur. Color of membrane pale brown.

Length of forearm, $7\frac{1}{2}$ inches; thumb, without claw, $2\frac{1}{4}$; first finger, 5; second finger, metacarpal, $5\frac{1}{2}$; first phal., 4; second phal., 6 inches; third finger, metacarpal, 5; first phal., $3\frac{3}{8}$; second phal., $3\frac{1}{4}$; fourth finger, metacarpal, $5\frac{1}{4}$; first phal., $2\frac{3}{8}$; second phal., $2\frac{1}{4}$; tibia, $3\frac{5}{8}$ in.

Skull. First upper premolar deciduous. Premolars and molars without posterior basal projections. A moderate sagittal and occipital crest. Orbit incompletely surrounded by bone. Upper incisors with a slight space between the middle and outer, the middle being the larger. Lower incisors grooved on top and behind, the middle ones slightly smaller than the outer, and all filling the space between the canines. A wide diastema between the canine and second premolar. Molars and premolars longer than broad in both jaws, with inner cusps well developed. Last lower molar with a round crown. Last upper molar longer than first lower premolar, which again is about equal to last lower molar. Teeth of both jaws, with the exception of last two lower molars sharp pointed. Nasals broadest and square at anterior end. Frontals greatly depressed between orbits.

Total length of skull $2\frac{1}{2}$ inches; width at orbits, $1\frac{1}{8}$; extent of upper molar series $\frac{7}{8}$ inch, of lower molar series, $1\frac{3}{8}$ inches. Length of nasal from junction with the frontal to anterior apex, $1\frac{1}{8}$ inches.

These two specimens are evidently fully adult, and do not seem to agree with the description of any species of *Pteropus* that I have been able to discover. They are almost precisely alike, the one not selected for the type, having more yellow on the back of the head, and the upper part of back and sides of neck are a dark foxy or maroon red instead of dark maroon like the type. In other respects there is no difference between them. It is a large species with great expanse of membrane.

The locality is a new one, and although some of the members of this genus have a wide distribution, it would not be surprising to find one very local in its habitat.

Regarding this species Professor Steere writes: "Leite is a more modern Spanish way of spelling Leyte, the name of the more westerly of the two large southeastern islands of the Philippines. The two islands are practically one in fauna, and are only separated by a narrow river-like arm of the sea. In this channel, at a small low island, about half a mile from either shore, I procured the bats sent you, labelled *Leite*. Here there seemed to be several species inhabiting the same roost and they were hanging from the branches of tall, bare bamboos. The fruit bats of the Philippines prefer small islands for their roosts, but will take up with other isolated localities. I found one roost on Negros occupying one immense hard wood tree standing by itself far from the forest on the plains of the western side of the island. Where they are not hunted for food by the natives, they sometimes roost near the native houses or villages for protection. Their roosts seem to be permanently occupied. We found the specimens we procured had been feeding upon the palm juice which the natives were collecting for saquir (toddy). The bats visit the trees at night and drink the juice from the cups hung on the trees."

***Pteropus lucifer* sp. nov.**

PLATE XIII.

Hab. Concepcion, Panay, Philippine Islands (Steere).

Adult Male. Hair on top of head and occiput tipped with bright yellow. Broad band on nape orange-ochraceous passing into reddish-brown on upper back. Sides of head beneath ears dark chestnut. Rest of back to rump blackish-brown, with a few yellowish hairs on middle of back. Throat and entire under parts black, with numerous grayish hairs scattered over the body, and a slight reddish tinge below the throat. Hair extending a short distance on the wing membrane above along the humerus blackish-brown like lower back. Beneath, membrane covered almost entirely on both sides of the humerus, and for nearly two-thirds the length of the forearm with woolly reddish-brown hair. Interfemoral membrane very narrow,

and entirely covered with hair in the middle. Tibia covered with hair for half the length above, naked below. Ears broad, narrowing towards the tip, which is rounded.

Skull. Sagittal and occipital crests present; orbits incompletely surrounded with bone. First premolar deciduous; upper incisors pointed, outer broader than inner, lower very small but filling space between canines, the outer about twice the width of the inner. Upper premolar, first and second upper molars, and second lower premolar, with two antero-internal basal cusps, the anterior one quite small. First lower premolar slightly larger than last lower molar, and both with round crowns. Last upper molar triangular, with one antero-external cusp. Length of skull from occiput to anterior end of nasal $3\frac{1}{8}$ inches. Length of upper molar series five-eighths of an inch, lower molar series three-fourths of an inch. The sagittal and occipital crests vary apparently among individuals, possibly on account of age, for while the type has low crests, the other specimen possesses crests of considerable height.

Length of forearm, $6\frac{1}{2}$ inches: thumb, without claw, $1\frac{3}{4}$ inches; first finger, $4\frac{1}{2}$; second finger, metacar., $4\frac{1}{2}$; first phal., $3\frac{3}{8}$; second phal., $5\frac{1}{2}$ inches; third finger, metacar., 4; first phal., $2\frac{3}{4}$; second phal., $2\frac{3}{4}$; fourth finger, metacar., $4\frac{1}{2}$; first phal., $2\frac{1}{4}$; second phal., $1\frac{7}{8}$; tibia, $2\frac{3}{4}$ inches; extent of wings, $5\frac{1}{2}$ inches.

Two specimens of this bat, both males, are in the possession of this institution. Regarding them Prof. Steere writes: "The black bats of Panay were found occupying a roost in some tall clumps of spiny bamboos, among the rice fields and almost over some of the native houses. They were thickly clustered in the tops of the bamboos, hundreds of them together. As we fired among them they rose and flew about overhead, squealing as they flew, but soon settled again. There seemed to be at least three species, inhabiting the roost together, but each species in trees by itself. All the species of *Pteropus* from Panay sent you, were from this roost." I can find no description answering for this species, which seems nearest allied to *P. alecto*, Temm.

Cynonycteris amplexicaudata Geoff.

Two examples from Dumaguete, Island of Negros.

Phyllorina diadema Geoff.

Two specimens from Guimares.

3. THE FOLLOWING SPECIES WERE CONTAINED IN A SMALL COLLECTION FROM YUCATAN, OBTAINED BY MR. H. H. BROWN AND PRESENTED TO THE MUSEUM BY MR. C. B. CORY.

Oryzomys ————— ?

Two males without skulls, therefore it is impossible satisfactorily to determine the species.

Sciurus yucatanensis *Allen*.

Two examples of females from Rio Lagotos and San Felipe.

This form described as a sub-species by Mr. J. A. Allen presents such a different appearance from the common species, *S. carolinensis*, and has so little in common with that animal, that I deem it entitled to specific rank.

Mus musculus *Linn*.

One female from Rio Lagotos.

Dasypsecta punctata *Gray*.

One specimen from Rio Lagotos.

Lepus sylvaticus aztecus *Allen*.

Five males from San Felipe of this strongly marked race.

Urocyon cinereo-argentatus fraterculus, *sub. sp. nov.*

San Felipe, Yucatan.

Adult Male. Top of head silvery-gray with very little rufous perceptible, the hair being black at base, tipped with grayish-white. Center of head darkest from nose to behind the ears, the black dominating the gray. A superciliary grayish-white stripe from base of nose to back of eyes. Back of head and neck gray with the fulvous under fur showing, and giving to this part a wash of that color. Back and sides dark gray, the black predominating; lower back to root of tail almost entirely black, merely sprinkled with gray. Nose black; base of ears behind dark fulvous, almost chestnut, rest of ears to tips brownish-gray. Sides of neck and band across chest pale fulvous. Chin black, grading into the pure white of the neck in front. Rest of under parts buffy white. Legs gray above, dark fulvous on outer sides, rich buff beneath and on inner sides, with a whitish line on inside of thighs. Tail silvery-gray with a brownish-black line down the center, and a rufous one beneath; tip black. Total length from tip of nose to root of tail sixteen inches, hind foot

from heel to end of toes $3\frac{3}{4}$ inches. Arm from elbow to end of claw $5\frac{1}{2}$ inches. Tail from root to end of hairs $13\frac{1}{2}$ inches. Ear, height posteriorly two inches, width one inch.

The young resembles the adult but is generally darker on the back, and without any bands across the chest, this part being pure white. The upper median line of the tail, and the tip, are jet black, without any of the brownish tinge seen in the adult.

This sub-species, besides being very much smaller in all its measurements than typical *U. cinereo-argentatus*, is easily recognizable by the very much darker coloring of the upper parts, and the type presents but little of the rich rufous coloration so conspicuous in the well-known species. The back of the ears is also very differently colored, the dark fulvous being confined to the base.

An example, apparently, of this sub-species, in the New York American Museum of Natural History, from Santo Domingo, Tehuantepec, collected by Dr. Buller, is even darker than the above described type, and also somewhat larger. The sides of the neck and under parts are dark fulvous, more like typical foxes from the northern part of the United States. The back is very dark, almost black. It was procured in April, and probably exhibits the full pelage of winter to better advantage than the type of the sub-species which was obtained nearly two months later in the year. The flanks of the Tehuantepec specimen are deep buff mixed with gray, which hue on this part, is absent in the Yucatan example.

These individuals represent a well-marked race, of darker pelage and smaller size than the other described forms, and are easily to be distinguished.

4. THE SPECIES GIVEN BELOW WERE COLLECTED BY MR. G. K. CHERRIE, ASSISTANT CURATOR OF ORNITHOLOGY IN THE FIELD COLUMBIAN MUSEUM, IN THE ISLAND OF SAN DOMINGO, IN THE WINTER OF 1895.

Mus alexandrinus *Geoff.*

Two specimens, an adult male and a young male, from Catare.

Mus decumanus *Pall.*

Six specimens, two females from Honduras, and one male and three females from Catare.

Mus alexandrinus. }
Mus decumanus. }

A female from Catare, evidently a hybrid between the above species.

Mus rattus *Linn.*

One female from Catare.

Mus musculus *Linn.*

One male and three females from Catare.

Herpestes griseus (*Desm.*).

One example from San Domingo City, introduced.

Mormops blainvillii *Leach.*

A single male of this curious bat from Aquacate, remarkable for the great elevation of the crown of the head above the face.

Macrotus waterhousei *Gray.*

Two males from San Domingo City.

Phyllonycteris poeyi *Gundl. & Peters.*

One male from San Cristobal.

Artibeus perspicillatus (*Linn.*).

A single male specimen from San Cristobal.

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FIG. 1.

PLATE VI.

Skull of Cervus ———?—Male.

- Fig. 1. View from above.
2. " " side.
3. " " below.







FIG. 2.
SKULL OF CERVUS—♂—MALE.



FIG. 3.

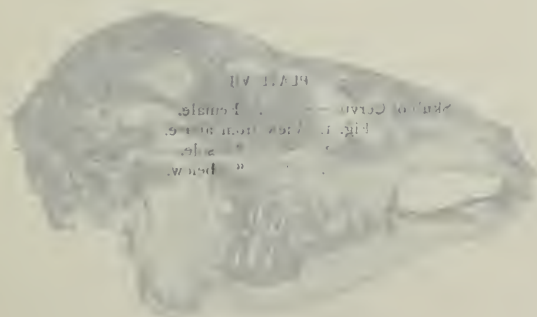


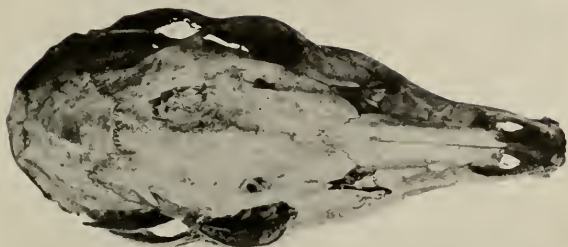
PLATE VII.

Skull of Cervus ———?—Female.

Fig. 1. View from above.

2. " " side.

3. " " below.



SKULL OF CERVUS——?—FEMALE.

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PLATE 19
1165 of 1172 sheets—1/25

Head of Mountain Sheep

PLATE VIII.

Head of *Cervus steerii*.—Male.



HEAD OF CERVUS STEERII.—MALE.

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PLATE IX.

Skull of *Cervus steerii*.—Male.

- Fig. 1. View from above.
2. " " side.
3. " " below.



SKULL OF CERVUS STEERII.—MALE.

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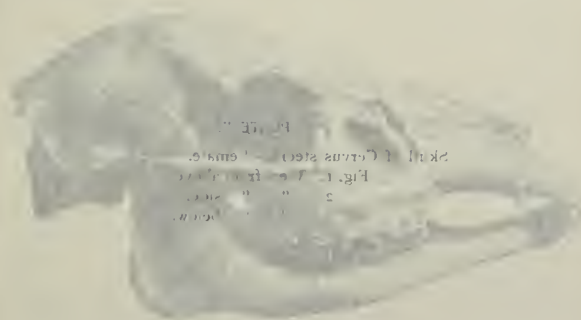


FIGURE 1
 SKULL (Mandible removed)
 FIGURE 2
 " " " "
 FIGURE 3
 " " " "

PLATE X.

Skull of *Cervus steerii*.—Female.

Fig. 1. View from above.

2. " " side.

3. " " below.



SKULL OF CERVUS STEERII.—FEMALE.

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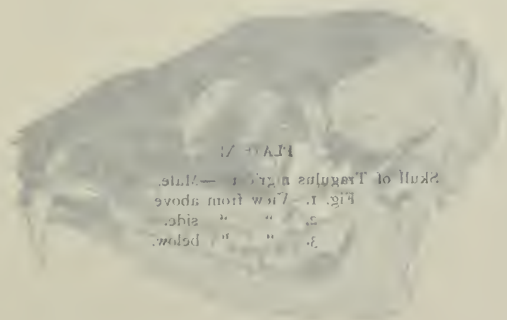


PLATE VI
 Skull of *Typhlops nigrifrons* — Plate
 Fig. 1. View from above
 2. " " side
 3. " " below

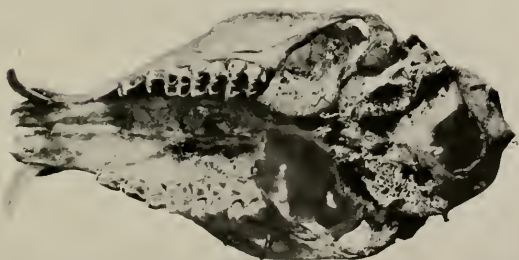
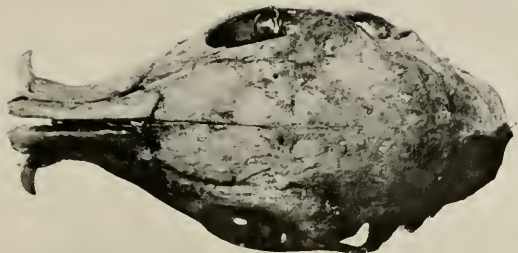
PLATE XI.

Skull of *Tragulus nigricans*.—Male.

Fig. 1. View from above.

2. “ “ side.

3. “ “ below.



SKULL OF TRAGULUS NIGRICANS,—MALE.

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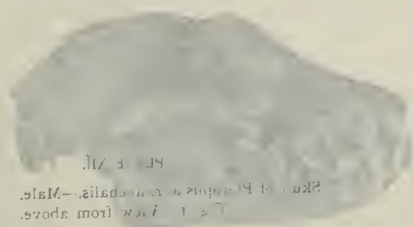


PLATE VII.
 Skull of *Phyllostoma discolor*.—Male.
 1. View from above.
 2. " " side.
 3. " " below.
 4. " " of lower jaw.



PLATE XII.

Skull of *Pteropus auri-nuchalis*.—Male.

Fig. 1. View from above.

2. " " side.

3. " " below.

4. " of lower jaw.



SKULL OF PTEROPUS AURI-NUCHALIS.—MALE.

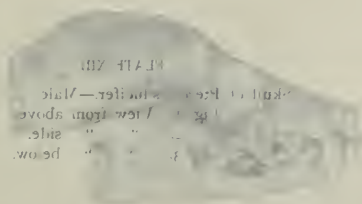


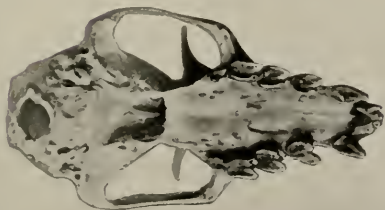
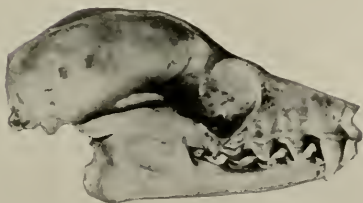
PLATE VII
 1. *Section of the rock*
 2. *Section of the rock*
 3. *Section of the rock*
 4. *Section of the rock*
 5. *Section of the rock*
 6. *Section of the rock*
 7. *Section of the rock*
 8. *Section of the rock*
 9. *Section of the rock*
 10. *Section of the rock*



PLATE XIII.

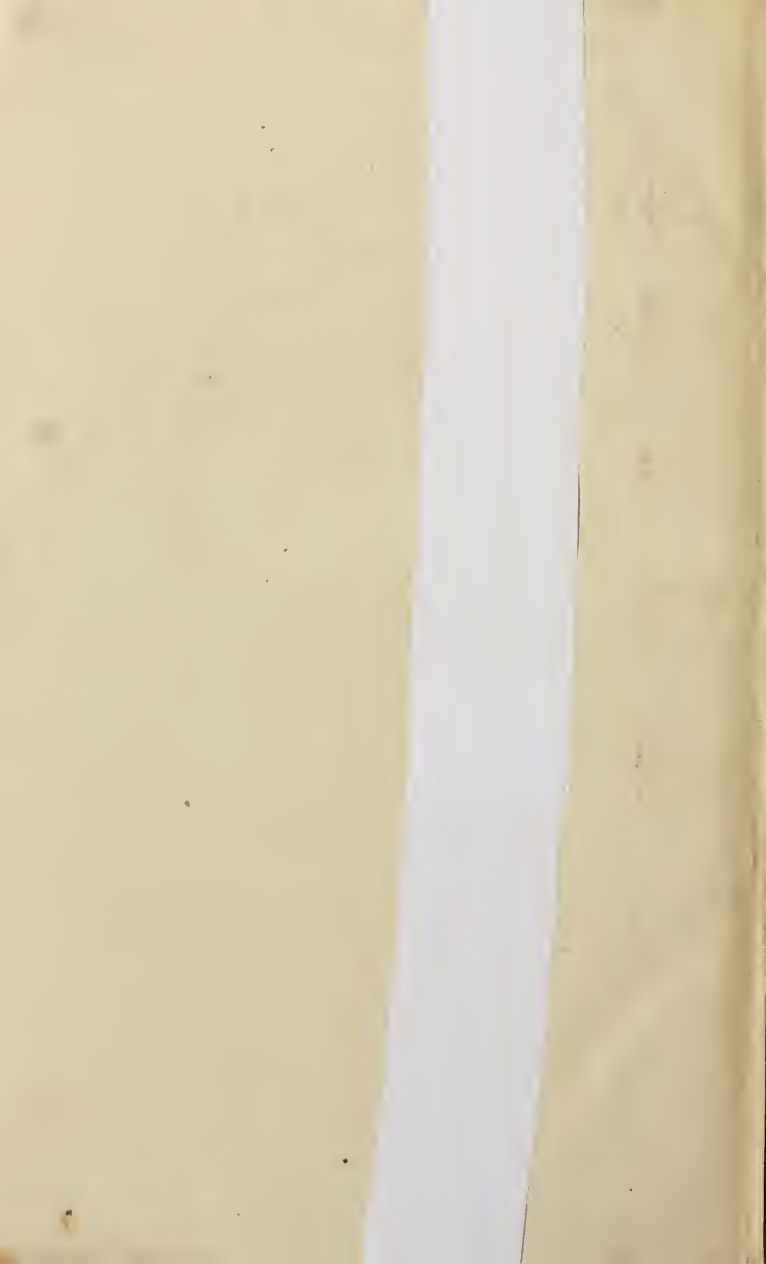
Skull of *Pteropus lucifer*.—Male.

- Fig. 1. View from above.
2. " " side.
3. " " below.



SKULL OF PTEROPUS LUCIFER.—MALE.

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